

4.12 HAZARDS AND HAZARDOUS MATERIALS

This section identifies impacts related to hazards and hazardous materials that would result from the development of each alternative described in **Section 2.0**. Impacts are measured against the environmental baseline presented in **Section 3.12**. Indirect and cumulative impacts are identified in **Section 4.14** and **Section 4.15**, respectively. Mitigation measures for hazards and hazardous materials are presented in **Section 5.2.11**.

SIGNIFICANCE CRITERIA

Impacts would be considered significant if they would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- Result in a safety hazard to people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport,
- For a project located within the vicinity of a private airstrip, would result in safety hazards for people residing or working in the project area;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

ANALYSIS METHODOLOGY

As discussed in **Section 3.12**, environmental remediation for areas impacted as a result of naval operations at the project site is being implemented under two programs: the Navy Compliance Program and the Installation Restoration Program (IRP) (Geomatrix, 2008, **Appendix P**). In accordance with the Base Realignment and Closure Act (BRAC) the Navy's compliance program addresses cleanup and

closure of the former fuel system consisting of the large underground storage tanks (USTs) and associated pipelines, buildings containing asbestos, and electrical systems with outdated transformers. The IRP addresses areas affected by hazardous materials identified under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Four areas were identified in the IRP including IR-01 – former waste disposal areas (Navy owned property), IR- 02 – sandblast grit disposal areas (City and Navy owned property), IR-03 – the treatment ponds area (Navy owned property), and IR-04 – the shoreline area (City and Navy owned). IR-02 was further divided into several sub-areas; these areas include IR-02 Areas A and B (Historic District) and IR-02 Areas C, D, and E (Drum lot 2). The locations of the IR sites are depicted in **Figure 3.12-1**. The lead agency overseeing remedial activities under both the compliance program and the Navy’s IRP is the San Francisco Regional Water Quality Control Board (SFRWQCB). In November 2008, the SFRWQCB adopted a new Site Cleanup Order (Order) and a Rescission of previously adopted Order Numbers 95-235, 97-124, and 97-125 based on the City of Richmond’s Early Transfer Cooperative Agreement with the Navy (included in **Appendix X**). As stated previously, the Order addresses cleanup of the Point Molate NFD after the early transfer of the remaining portions of the project site. The dischargers on the adopted SFRWQCB Order are the City and the Navy. The City has a remediation agreement with Upstream (**Appendix C**), which is assumable by the Tribe, to implement the cleanup obligations of the Order and the ETCA on behalf of the City. Additionally, compliance with the cleanup obligations stipulated in the SFRWQCB Order are mitigation measures in this EIS/EIR, and, as an addendum to the Municipal Services Agreement, would be enforceable. Furthermore, the Tribe has provided a limited waiver of sovereign immunity for enforcement of the MSA; the waiver is provided in Section 11.3 of the MSA (**Appendix C**).

Impacts from hazardous materials were analyzed by performing a Phase I Environmental Site Assessment (ESA) (**Appendix P**) and examining available documentation relating to past releases of hazardous substances relating to the extent of past and on-going remediation activities at the project site. The effectiveness of the remediation activities was evaluated by comparing the soil and groundwater analytical results with established regulatory thresholds for constituents of concern (COCs). Where available, site specific Fuel Product Action Levels (FPALs), approved by the SFRWQCB, were used as a threshold for evaluating remediation at the project site. FPALs quantify residual fuel products such as total petroleum hydrocarbons (TPH) and benzene, toluene, ethyl-benzene, and xylenes (BTEX). In cases where site-specific FPALs have not been established, SFRWQCB Environmental Screening Levels (ESLs) for soil and groundwater were used. For soils impacted with metals, both the United States Environmental Protection Agency (USEPA) Region 9 Preliminary Remediation Goals (PRGs), and California Modified PRGs were used, as the FPALs do not include metal COCs. These screening levels are intended as an initial screen of soil and ground water analytical data, but are not typically used where site-specific cleanup levels have been established. Impacts are considered significant in cases where regulatory thresholds are exceeded and the exceedance results in a potential risk to human health or the environment based on the proposed use.

While no federal standards have been established by which potential impacts resulting from the release of acutely hazardous materials may be assessed (e.g., anhydrous ammonia), the Bay Area Air Quality Management District (BAAQMD) provides guidance for evaluating impacts related to airborne constituents of concern. While a number of possible scenarios present themselves with respect to the release of hazardous materials, the Alternative Release Scenario (ARS) is considered to most closely reflect the “*reasonably foreseeable upset and accidental conditions*” significance criteria. Refer to **Section 3.12** for a discussion of the ARS.

Analysis of potential impacts resulting from physical interference or impairment of adopted emergency response/evacuation plans was achieved in the following manner. First, all relevant and available emergency response/evacuation plans were compiled and their constituent parts were isolated. Next, potential evacuation routes were compared with the points of ingress and egress for the Proposed Project. Finally, elements of the Proposed Project with any potential to interfere with established plans were considered.

Risks posed by the threat of wildland fires were analyzed by identifying the project site’s classification according to the California Department of Forestry and Fire Protection’s (CAL FIRE) potential fire severity mapping system.

4.12.1 ALTERNATIVE A – MIXED-USE TRIBAL DESTINATION RESORT AND CASINO

IMPACTS OF ALTERNATIVE A

- 4.12.1 Alternative A would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This would be a less-than-significant impact.**

Transport

As discussed in **Section 3.12**, no petroleum products or hazardous materials have been stored on the project site since the Navy ceased fueling operations in 1996. Project related transport of hazardous materials would be limited to infrequent transport of diesel fuel for use at onsite emergency generators and routine transport of cleaning supplies, pesticides, and herbicides, some of which may be hazardous. The transport of diesel fuel would not be routine and would thus not present a significant hazard to the public. Although the transport of cleaning supplies, pesticides, herbicides, and fertilizers would occur more frequently, their transport would be governed by federal and State laws to ensure proper transport occurs, thus minimizing injury to human health and the environment. Thus a *less-than-significant* impact would occur.

Hazardous Materials Use

The use of cleaning materials, floor strippers, cleaning solvents, herbicides, pesticides, and fertilizers would be governed by federal, State, and local laws. These laws include provisions for labeling and notification of employees about potential environmental hazards for chemicals in the work place. Such laws increase the likelihood that hazardous materials would be stored and used in a manner that minimizes human health hazards and injury to the environment. For instance, pesticide-related activities are primarily regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which requires that pesticide application occur in a manner consistent with product label instructions. Pesticide application would be performed in a manner consistent with product label and manufacturer's recommendations in order to reduce the risk of unintended environmental injury. Finally, risk of creating a sufficient hazard to the public or environment due to a spill or misuse is very low due to the relatively small quantities of cleaning and landscaping materials stored onsite. Therefore, due to the presence of laws governing the use and labeling of workplace chemicals and landscaping materials and the relatively small quantities of such materials that would occur onsite, a *less-than-significant* impact would occur.

The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations include provisions that require facilities to document the potential risk associated with the storage, use, and handling of toxic and flammable substances. OSHA regulations are codified in 29 Code of Federal Regulations (CFR) Parts 70-71, 1990-1990, 2200-2205, and 2400. During operation of the facilities included under Alternative A, the majority of chemicals stored onsite would be non-hazardous and are common to commercial sites. These chemicals do not pose unusual storage, handling, or disposal issues. Thus, given the applicable federal regulations that are in place requiring facilities to document potential risks, a *less-than-significant* impact would occur.

Diesel powered generators would be necessary for hotel and casino fire suppression systems and as a secondary power source for the facilities planned under Alternative A. In case of emergency or periodic maintenance, the generators would be self-contained units equipped with double walled fuel tanks and leak detectors. Although not likely, if a fuel leak were to occur, the outer tank would contain the leak. Security personnel would monitor the leak detection system. Because of containment measures and leak monitoring, the presence of diesel fuels on the project site would not result in a significant hazard to the public or environment. As such, a *less-than-significant* impact would occur.

Disposal

Diesel fuels and chemicals in the form of cleaning supplies, solvents, pesticides, and herbicides used during operation of Alternative A would be used as directed and according to

manufacturers' guidelines. This is a reasonable assumption because compliance with such directions and guidelines would be expected to maximize the effectiveness of such products while minimizing risks of harm to employees and patrons. Landscaping chemicals such as pesticides and fertilizers would be utilized during project operation. Chemicals would be similar to those applied to other offsite landscaped developments. All materials transported to the site would be utilized as directed, thus no inadvertent disposal of these chemicals would occur onsite. No storage of bulk pesticides and fertilizers would occur during project operation, thus potential environmental injury from inadvertent disposal would not occur. This is a *less-than-significant* impact. However, **Mitigation Measure 11-1** is proposed in **Section 5.2.11** to further reduce impacts.

4.12.2 Alternative A has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1 through 3-13, 11-1 and 11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

As discussed in Section 2.1.5, aggressive remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release hazardous materials could result in potential human and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in Sections 5.2.2, 5.2.3 and 5.2.11.

During the anticipated 12 months of active remediation, the presence of impacted soils and water could create a significant environmental impact if released within the project site. Best Management Practices (BMPs) for on-going cleanup can often eliminate the potential for a release or additional contamination. The BMPs would be outlined within a site specific Storm Water Pollution Prevention Plan (SWPPP) that would be required as part of a National Pollution Discharge Elimination System (NPDES) Construction General Permit included in Mitigation Measure 11-1. Approximately 90 percent of the impacted soils are considered non-hazardous and would be disposed of at the Altamont Landfill, Kirby Canyon Landfill, or equivalent facility. These facilities have verified their capacity to accept impacted soil from

the project site. Approximately 10 percent of the impacted soils are considered hazardous and would be disposed of at the Kettleman Hills Landfill or equivalent facility. With implementation of **Mitigation Measures 2-1, 2-2, 3-1** through **3-16**, and **11-1**, potential impacts to human health and environmental associated with remediation would be *less-than-significant*.

Construction

The possibility exists that undiscovered contaminated soil and/or groundwater exist on the project site. Construction personnel could encounter contamination during earth moving activities. The unanticipated discovery of contaminated soil and/or groundwater could result in potential human health and environmental impacts. Such impacts are considered *potentially significant* and **Mitigation Measure 11-1** is proposed in **Section 5.2.11**.

During construction, limited quantities of miscellaneous hazardous substances such as fuels, solvents, oils, and paint would be used and stored at the project site. Construction contractors would be permitted to use temporary bulk above-ground storage tanks (ASTs) as well as storage sheds or trailers for fueling and maintenance purposes. If properly used, stored, and disposed of, these materials would not be a hazard to people or the environment. However, if these materials are not properly used, stored, or disposed of, spills or leaks could pose a hazard to onsite construction personnel. The presence of hazardous materials on the project site during construction could create a significant environmental impact if spilled in such quantities that residual impacts and potential contamination would occur. Best Management Practices (BMPs) for storing hazardous materials often eliminate the potential for such spills to occur. The BMPs would be outlined within a site specific Storm Water Pollution Prevention Plan (SWPPP) that would be required as part of a National Pollution Discharge Elimination System (NPDES) Construction General Permit (General Permit) included as **Mitigation Measure 11-1**. The implementation of BMPs and General Permit compliance would be implemented as part of Alternative A. Compliance with the General Permit and a site specific SWPPP would reduce potential impacts to *less-than-significant* levels.

On-site Hazardous Materials

The Navy ceased fueling operations on the project site in 1996; as a result, hazards to the public and environment through reasonably foreseeable conditions involving the release of hazardous materials have been significantly reduced. Historical releases of hazardous materials and areas affected by Navy operations on the project site are inventoried within the 1996 Environmental Baseline Survey (EBS) as discussed in **Section 3.12**.

Under Alternative A, no significant impacts relating to accidental conditions involving future onsite hazardous materials are anticipated. Federal, State, and local laws increase the

likelihood that hazardous materials would be stored and used properly. Future onsite hazardous materials would be limited to small quantities of cleaning and landscaping materials. Regarding current onsite hazardous materials, the Navy has ceased fueling operations; therefore, no bulk hazardous materials are stored onsite. Diesel storage associated with Alternative A would be limited to small quantities needed to supply emergency generators. Diesel storage tanks would be self-contained and equipped with leak detectors (see **Impact 4.12.1**). Due to the limited quantities of hazardous materials that would be stored and used onsite, containment measures, and the presence of use and labeling laws, a *less-than-significant* impact would occur.

Off-site Hazardous Materials

As discussed in **Section 3.12**, the project site is located in proximity to two industrial facilities (Chevron-Richmond Refinery and General Chemical) that store hazardous materials on-site. Hazardous materials of concern stored at the two facilities include anhydrous ammonia (NH₃), flammables, and petroleum. The Final EIS/EIR for the Disposal and Reuse of the Fleet and Industrial Supply Center, Naval Fuel Depot Point Molate (Navy, 2002), concluded that flammables and petroleum stored at the Chevron-Richmond Refinery and General Chemical facilities would not impact the project site under Alternative Release Scenarios (ARS), and are therefore not afforded further consideration here (Navy, 2002: 4-14; **Appendix U**). The following discussion is concerned with the potential impacts associated with an accidental release of NH₃.

Alternative A would introduce a significant number of employees and visitors to the project site, thus increasing the number of people potentially exposed to hazards related to an accidental release of NH₃ from the Chevron-Richmond Refinery.

The potential for, and consequences of, a release of NH₃ from the Chevron-Richmond Refinery was addressed in the Final EIS/EIR for the Disposal and Reuse of the Fleet and Industrial Supply Center, Naval Fuel Depot Point Molate (Navy, 2002; **Appendix U**). The Navy's Final EIS/EIR considered three redevelopment alternatives, including residential and commercial uses (Alternative 1), industrial and commercial uses (Alternative 2), and recreation and commercial uses (Alternative 3). The Final EIS/EIR reported the following significant and unmitigatable impact for Alternative 1 related to an NH₃ release:

- All of the project site would be within the toxic endpoint of a Worst-Case Scenario (WCS) for ammonia, and about three-quarters of the property (the Southern Development Area and most of the Central and Northern Development Areas) would be within an Alternative Release Scenario (ARS) for ammonia from the refinery (Figure 3.9-5 and Figure 4.1-2 of **Appendix U**).

The Navy's Final EIS/EIR concluded that non-residential uses of the project site posed less of a risk to human health because employees associated with commercial uses (non-residential) would "have shorter lengths of stay (typically eight hours), would tend to be inside for the majority of that time period, and typically would be better prepared for accidents and emergencies than residents" (**Appendix U: 4-8**). Furthermore, commercial and recreational visitors are assumed to have even shorter lengths of occupancy on the project site. It was also noted that Contra Costa County's Community Warning System, which is designed to alert the public in the event of a chemical accident, did not provide siren coverage for the project site during the drafting of the Final EIS/EIR.

The Navy's Final EIS/EIR used the following assumption to analyze the significance of impacts: "Although the probabilities of occurrence of the WCS or ARS have not been quantified, both scenarios are possible. The WCS is an absolute worst-case scenario, while the ARS is considered to be a more likely release scenario" (**Appendix U: 4-9**). As such, the Navy's Final EIS/EIR concluded that it is not physically possible to provide an adequate buffer between sensitive receptors located in the proposed residential area resulting in a significant and unmitigatable impact.

In order to quantify the probable occurrence of WCS and ARS NH₃ releases, a quantitative consequence modeling analysis was prepared in 2007 by Marine Research Specialists (MRS) (MRS, 2007, **Appendix M**).

In the event of an NH₃ vapor cloud reaching the project site, potentially significant human health impacts would occur. These impacts would be based on exposure concentrations at the project site. Several dispersion models were created by MRS to analyze exposure scenarios. Three release scenarios were considered (WCS, ARS, and Probable WCS), all of which resulted in a very low probability of a vapor cloud reaching the project site (**Table 4.12-1**).

MRS concluded that a WCS, resulting from a catastrophic failure of the NH₃ storage vessel, is extremely unlikely. The analysis found that the probability of the WCS occurring was one in 11,000,000 years (**Table 4.12-1**). The second scenario considered is that of an ARS, resulting from a catastrophic bleeder valve failure. The probability modeling found that the chance of this scenario is roughly one in 725 years. MRS concluded that the consequences of the ARS would be negligible due to active mitigation measures, technical safeguards at the facility, and the environmental conditions of the project site and facility. Lastly, the Probable WCS (PWCS) was analyzed, which considered the chances of a liquid pipe failure. The analysis found that the PWCS has the potential to occur once in 12,820 years. Moreover, the MRS modeling determined the consequences of the PWCS as negligible with the incorporation of

the water deluge system and other on-site facility mitigation measures, technical safeguards, and the environmental conditions present (MRS, 2007).

TABLE 4.12-1
ACCIDENTAL RELEASE PROBABILITIES

Release Scenario	Cause	Probability (per year)	Return Period (years)
RMP WCS ^a	Catastrophic Vessel Failure	9.0×10^{-6} /yr	11,000,000
RMP ARS ^b	Catastrophic Bleeder Valve Failure	6.9×10^{-5} /yr	725
Probable Worst-Case	Catastrophic Liquid Pipe Failure	7.8×10^{-5} /yr	12,820

Notes:

^a RMP WCS = Risk management plan worse case scenario

^b RMP ARS = Risk management plan alternate release scenario Source: Marine Research Specialists, 2007 (**Appendix M**)

Based on the MRS analysis, the likely WCS would most likely leave the project site untouched from an accidental release of NH₃. Moreover, the active mitigation used by the Chevron-Richmond Refinery would further reduce the potential for an accidental NH₃ release reaching the project site. The differing conclusions reached in the Navy's Final EIS/EIR and that of the MRS study may be accounted for by the following: 1) the Navy's Final EIS/EIR did not quantify the chances of the different release scenarios; 2) active technical and mechanical safeguards currently in place were not considered by the Navy study; and 3) not all mitigating environmental conditions were considered in the Navy study.

Chevron has installed on-site active mitigation systems as well as controls that prevent and protect against a catastrophic ammonia release within the facility (**Section 3.12**). Mitigation systems in place at the facility include a firewater deluge system that emits a water vapor cloud around the vessels such that potential NH₃ vapor cloud would be contained in the event of a fire. The NH₃ storage vessels have leak detection systems with audible and control room alarms, pressure relief devices, excess flow valves, and emergency block valves to prevent or limit the severity of a release. Additionally, a firewater-monitor fog system, which consists of water fog sprays, would effectively disperse a NH₃ vapor cloud.

In addition to the numerous technical, mechanical, and procedural safeguards currently in place at the Chevron-Richmond Refinery, a number of environmental factors further reduce the likelihood of the project site being impacted by an accidental release of NH₃.

The 2007 MRS study found that the topography of the Potrero Ridge, which separates the project site from the Chevron-Richmond Refinery, creates an impediment for potential ammonia releases reaching the project site. The study cites the following factors that would affect the dispersion of an NH₃ vapor cloud (**Appendix M: 2**):

- The Potrero Ridge increases the actual travel distance between the storage vessels and project site by about 100 feet (from a linear distance of about 4,590 feet to 4,690 feet);
- The topographic barrier would preclude ammonia vapor cloud advection over the ridge during periods with extremely low wind speeds or inversion heights below approximately 350 feet;
- The ridge would increase turbulence and vapor cloud diffusion as the wind travels over the terrain;
- The ridge would create a turbulent vortex on the lee side of the terrain, thus further enhancing vertical diffusion within the vapor cloud; and
- Furthermore, prevailing winds blow in the direction of the project site from the Chevron-Richmond Refinery approximately 16 percent of the time.

Thus, given the very low probability of an accidental NH₃ release from the Chevron-Richmond Refinery, the active safeguards currently in place, and the environmental setting discussed above, impacts to the project site are not considered reasonably foreseeable. With integration of **Mitigation Measure 11-2**, potential human health risks associated with an NH₃ release would be *less-than-significant*.

4.12.3 Alternative A would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.

In the event of a hazardous materials release at the nearby Chevron-Richmond Refinery, Contra Costa Health Services (CCHS) would activate the CWS to alert the community of North Richmond that such a release has occurred. If the CWS is triggered, the Chevron-Richmond Refinery employees may be required to evacuate. Currently, the Chevron-Richmond Refinery evacuation routes are oriented away from the project site, towards the core of Richmond. These evacuation routes utilize surface streets that would not directly impact potential evacuation routes from the project site, since the only direct access to Point Molate is by way of Western Drive via Interstate 580 (I-580). In the event of a mass evacuation from the Chevron-Richmond Refinery, routes connecting directly to Castro Street would be the preferred evacuation routes. These routes do not directly impact egress routes from the project site and Western Drive. Evacuation routes from the project site would connect by land along Western Drive directly to I-580 or toward the northern end of the peninsula where water

rescue could occur. These routes would not significantly impact the preferred evacuation routes from the Chevron facility. Because project site evacuation routes do not directly connect to preferred Chevron-Richmond Refinery evacuation routes a less-than-significant impact would occur. As such, Alternative A would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, a *less-than-significant* impact would occur.

4.12.4 Alternative A is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore development of Alternative A would not result in a safety hazard for people residing or working in the project area. As a result, no impact would occur.

The nearest airports are the San Rafael Airport located approximately 6.8 miles northwest, Gness Field located approximately 15.2 miles north, and Buchanan Field located approximately 20 miles east of the project site. The project site is not located within an area covered by an airport land use plan or within two miles of a public use airport, or in the vicinity of a private airstrip. As such, *no impact* would occur.

4.12.5 Development areas associated with Alternative A, are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result, development of Alternative A poses a potentially significant risk to human health and the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 11-3** through **11-11** presented in **Section 5.2.11**, potential human health and environmental impacts would be reduced to *less-than-significant* levels.

Impact Discussion

As stated previously, the Navy ceased fueling operations on the project site in 1996; as a result, hazards to the public and environment through the potential release of hazardous materials have been significantly reduced. Historical releases of hazardous materials and areas affected by Navy operations on the project site have been inventoried within existing Navy documents under the Navy's Installation Restoration Program (IRP). As stated in **Section 2.1.4**, a conceptual Remedial Plan (RP) was prepared in November 2008 by Upstream that describes the Environmental Services obligations of the Tribe and Upstream (**Appendix X**). The RP includes an aggressive strategy to remove soils that have been affected from past Navy operations at the project site. The RP was developed in accordance with the requirements of the Order adopted by the SFRWQCB (**Appendix X**). The RP, which is part of the Proposed

Project, is summarized in **Section 2.1.5**. Future monitoring efforts would be subject to the new adopted Order. The Order includes groundwater-monitoring requirements that would continue with regulatory oversight provided by the SFRWQCB. Groundwater monitoring would continue in areas adjacent to the hillside USTs and areas that are identified in the IRP, CAP, and the Order. The site specific FPALs, as applicable, and SFRWQCB ESLs, would continue to be used during future monitoring to determine if groundwater conditions change such that they pose a risk to human health and the environment.

The RP and Order identifies areas of the project site that require additional monitoring and remedial actions, these areas include IR-01 – former waste disposal areas (Navy owned property), IR-03 – the treatment ponds area (Navy owned property), and IR-04 – the shoreline area (City and Navy owned). The locations of the IR sites are depicted in **Figure 3.12-1**.

IR-01: Former Landfill: Remedial actions have taken place to address the potential human health and environmental impacts within the former landfill area. Capping of the former landfill area has eliminated exposure pathways that would result in potential human health and environmental impacts. Under Alternative A, there is no planned reuse for the former landfill area; as a result, the soil cap would remain in place. Land use restrictions are in place at IR-01 to ensure soil cap integrity. Such restrictions are intended to ensure no residential development occurs within the areas of the former landfill. Post-closure maintenance and monitoring is currently being conducted annually at IR-01 in accordance with the Site 1 Post Closure Maintenance and Monitoring Plan (PCMMP) (TTEMI, 2002b). Methane and groundwater monitoring would continue under an overall facility-wide groundwater monitoring plan (GMP) as stipulated in the Order. Post-closure reviews would be conducted every five years to assure human health and environmental impacts remain less-than-significant. The SFRWQCB would continue to review and comment on the post-closure reviews. The reviews would be based on post closure monitoring data, which assesses soil, groundwater, and soil cap integrity. Under Alternative A, ~~a potentially significant impact would~~ adverse environmental impacts could result if the soil cap and land use restrictions were not maintained according to the PCMMP (TTEMI, 2002b). Under Alternative A, no development would occur within IR-01, as such; soil cap integrity within the former landfill would be maintained. Although significant human health and environmental impacts would not occur in the areas of the former landfill under Alternative A, mitigation is proposed in **Section 5.2.11**.

IR-02 Areas A and B (Historic District): Under Alternative A, IR-02 would be the location of a conference center and parking structure. In 1997, during closure activities, the Navy removed 192 cubic yards (cyds) of sandblast grit intermixed with soils from Area A (**Section 3.12**). The affected soils were subsequently disposed of at an off-site landfill as hazardous

waste. No removal action was completed for Area B, since no sandblast grit was visibly present during initial site investigations. After the 192 cyds of affected soils were removed, a human health risk assessment and a qualitative ecological risk assessment were conducted at all IR-02 investigation areas. The results indicate constituents of concern (COCs) that remain in soils are not expected to result in adverse health effects. However, site-specific FPALs do not include metals; as a result, the Navy compared sample results to USEPA Region 9 PRGs and California Modified PRGs for cadmium, chromium, and nickel. Based on the PRGs and California Modified PRGs, a No Further Action Record of Decision (NFA ROD) was issued by the Navy and approved by the SFRWQCB. However, for this impact analysis, the SFRWQCB ESLs for commercial/industrial land use scenarios were used for comparison. Analytical results indicated samples contained metal concentrations above the ESLs for commercial/industrial land use scenarios. If left in place such soils could pose a potentially significant human health impact for potential park maintenance workers. Under Alternative A, soils in this area would be excavated to make room for a conference center and parking garage. Subsequently, surface soils that contain elevated concentrations of metals would be removed (estimated to be one foot bgs) and disposed off-site at a licensed disposal facility. During excavation of soils that exceed SFRWQCB ESLs for commercial/industrial land use scenarios, potential human health impacts would occur if a soil management plan (SMP) was not developed. *Potentially significant* human health impacts would be reduced to less-than-significant levels through the development and implementation of a site specific SMP. Implementation of a SMP is included as mitigation in **Section 5.0**.

IR-02 Areas C, D, and E: Under Alternative A, this area would remain in its current condition, and used occasionally for event parking. In 1997, approximately 18 cyds of sandblast grit were removed from Area C and disposed offsite at a hazardous waste facility. In 1998, approximately 30 cyds of sandblast grit was removed from Area D. Confirmation soil sampling detected metals in the soil at Areas C and E below threshold levels. As stated previously, a human health and ecological risk assessment and NFA ROD was issued by the Navy and approved by the SFRWQCB for all IR-02 sub areas. Site-specific FPALs do not include metals; as a result, during site assessment activities, the Navy compared sample results to USEPA Region 9 Preliminary Remediation Goals (PRGs) for target metals and California Modified PRGs for cadmium, chromium, and nickel. Analytical results indicated samples had metals concentrations below these threshold levels and COCs that remain in soils are not expected to result in adverse health or environmental effects. Under Alternative A, no residual human or ecological impacts would occur for IR-02, Areas C or D, or E (Drum Lot 2). Thus *no impact* would occur.

IR-03: Treatment Ponds Area: Under Alternative A, IR-03 is the location of the casino resort complex. A majority of the groundwater sampling locations had petroleum hydrocarbons that

exceeded the commercial/industrial ESLs during 1992 to 2001. Impacted groundwater that exceeds site specific FPALs for total petroleum hydrocarbons (TPH) and fuel related constituents have been observed. During previous sampling events, free fuel product was observed in four of the ten monitoring wells within the IR-03 area. Petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), and vinyl chloride have been detected in three of the ten monitoring wells at concentrations exceeding groundwater ESLs. In addition to groundwater, soils affected with TPH, PAHs, metals, and, in one location, volatile organic compounds (VOCs) have been detected at levels that exceed ESLs for commercial/industrial land use scenarios. Groundwater that exceeds site specific FPALs for TPH is currently being mitigated with an onsite containment and extraction system located within the IR-03 area. Under Alternative A, significant human health and environmental impacts would occur if operation and maintenance of the IR-03 containment and extraction system is not conducted. VOCs in soils could result in significant human health impacts to construction workers if levels beyond what have been currently measured at the site are exposed during excavation activities. Under the current land use scenarios, the presence of un-remediated soils affected with TPH, PAHs, metals, and VOCs that exceed ESLs for commercial/industrial land use scenarios could have a potentially significant impact. Potentially significant human health and environmental impacts could occur if soils that exceed applicable thresholds are not removed or otherwise remediated. Removing impacted soils would reduce impacts to less than significant levels and would potentially allow for unrestricted use within the treatment pond area. During excavation of impacted soils, potential human health impacts could occur if a Soil Management Plan (SMP) was not developed. Such impacts would be reduced to less-than-significant levels through removal of targeted soils and development and implementation of a site specific SMP. Removal of affected soils within the IR-03 investigation area and implementation of a SMP are included as mitigation in **Section 5.2.11**.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative A, the northern and shoreline areas and Drum lot 1 would be developed into a shoreline park, public trail, and resort hotel and retail village. FPALs in the northern shoreline areas for park maintenance and recreational user land use scenarios have been met through the CAP. No further action is necessary for impacted groundwater and soils within the northern shoreline areas. For the southern shoreline areas, soils affected with petroleum hydrocarbons are present that exceed recreational and park maintenance FPALs, particularly in the area directly south of Drum lot 1. Drum lot 1 is a paved area located near the fuel pier, south of the containment wall/extraction trench at IR-03 (**Figure 3.12-1**). The IR-03 containment wall was extended to include Drum lot 1 to eliminate fuel product from entering the Bay. Fuel pier pipelines and associated valve boxes were removed from 1998 to 2000. Soil impacted with PAHs is present in the areas of former fuel pipeline valve boxes. PAHs are generally not volatile enough to pose a vapor intrusion threat. The valve boxes are located adjacent to Drum lot 1.

Dibenzo(a,h)anthracene, which does not have a FPAL, is present at concentrations exceeding its commercial/industrial ESL. Subsurface soils along the former pipeline contain residual petroleum (TPH) and PAHs exceeding the park maintenance FPAL. TPH impacted soils are reported to occur at depths up to 20 feet below ground surface (bgs) over an estimated area of 4.27 acres. Removal actions have already been completed to address COCs at Drum lot 1. Groundwater monitoring continues at Drum lot 1 on a semi-annual basis in accordance with the CAP. Petroleum hydrocarbons have exceeded the FPALs in one of the monitoring wells during every sampling event since 2005. Analytical data for samples collected from the other six monitoring wells within Drum lot 1 have been below the FPALs. Potentially significant environmental impacts would occur if the existing groundwater containment/extraction system is not operated and maintained properly. Construction personnel exposure could result in potentially significant human health impacts during excavation activities. Under Alternative A, the existing groundwater containment/extraction system could continue to be operated according to the Basewide Monitoring Plan and CAP, or other measures taken to remove TPH-affected soils in this area, reducing potentially significant environmental impacts to less-than-significant levels. Potentially significant impacts from construction worker exposure would be reduced to less-than-significant levels through development and implementation of a SMP. The SMP would be developed prior to construction and would address potential human health concerns during construction and mass grading. As previously noted, while this analysis proposes a reasonable set of remediation procedures, the final measures would be in accordance with the Order which outlines the specific deliverables and schedule to complete the outstanding evaluations, remediation work, and monitoring and reporting for the site. Future monitoring efforts would be subject to the Order (**Appendix P**) which includes a long-term groundwater monitoring and a site specific SMP to be implemented during construction activities. With the proposed mitigation included in **Section 5.2.11**, potential impacts are reduced to *less-than-significant* levels.

IR-04: Drum Lot 2 and Building No. 87: Drum lot 2 is a paved area located in the southern half of the site and was used to store fuel drums filled onsite and drums for transport off site. Sandblasting was conducted in the northwest corner of Drum lot 2. Building No. 87 is located adjacent to Drum lot 2 near the south shoreline area and is comprised of a corrugated metal Quonset hut. Building 87 was used by the Navy's Disease Vector Control and Ecology Control Center (DVECC) as an industrial supply warehouse, equipment repair facility, and pesticide storage and training facility. Building 87 is located within the Shoreline Park/Trail under Alternative A. Under Alternative A, building 87 would be removed and Drum lot 2 would be used as event parking. In 2001 approximately 200 tons of impacted pesticide contaminated soils were excavated and removed from areas adjacent to Building 87 and four new groundwater monitoring wells were installed. A human health and ecological risk assessment was conducted in 2002 and concluded COCs remaining in soils do not pose an

unacceptable risk to human health or the environment (Tetra Tech EMI, 2003). Pesticide and PAH affected soil that exceed commercial/industrial ESLs remain at Building 87. Residual impacts in soil consist of dieldrin and benzo(a)pyrene adjacent to Building 87. The criteria used to evaluate the nature and extent of residual impacts in this area are the recreational FPALs for depth up to 2 feet bgs and the park maintenance FPALs for depths approximately 2 to 10 feet bgs. For dieldrin, trichloroethylene (TCE) and vinyl chloride, which do not have site-specific FPALs, the screening criteria used are the commercial/industrial RWQCB ESLs for soil. Dieldrin and benzo(a)pyrene have been detected in groundwater at concentrations above the ESLs in areas adjacent to and beneath Building 87. These concentrations have been steadily decreasing over the previous nine years. Nevertheless exceedance of the screening criteria in soils and groundwater are considered to have a potentially significant impact. Under Alternative A, groundwater would continue to be monitored under the existing BWMP to evaluate VOC concentrations or additional remediation measures undertaken to remove the higher concentrations near the source. Mitigation measures to reduce potential human health risks and environmental impacts to *less-than-significant* levels are presented in **Section 5.2.11**.

Underground Storage Tanks – Hillside Areas

Under Alternative A, several project components are planned for the hillside areas. These project components include tribal offices, roundhouse, dance grounds, and resort hotel cabanas. Currently, deed restrictions are in place that limits development of the hillside areas. Some deed restrictions would be removed upon regulatory closure of the USTs and concurrence from SFRWQCB. As designed, the tribal facilities (offices, roundhouse, and dance grounds) would be built adjacent to USTs 5, 7 and 13, respectively. Additionally, the Point Hotel parking garage and nearby hillside Casitas would be built in areas adjacent to USTs 1, 2 and 3. Prior to development of any of the above referenced facilities, the subject USTs would be excavated and removed followed by regulatory closure and removal of the relevant deed restrictions by the SFRWQCB.

Potential vapor intrusion risks could remain for USTs 1, 2, 3, 5, 7, and 13, depending upon sampling results for lighter fraction hydrocarbons. If present, vapor intrusion risks are limited to potential development areas associated with the Tribal Office and Cultural Dance House, Tribal Field, and resort hotel cabanas. These potential risks would be mitigated through removal of affected soils associated with the USTs in question, such that no residual potential human health impacts remain. Alternatively, soil vapor extraction systems could be installed to remove vapor phase constituents and ensure no human health impacts remain. These measures are included as **Mitigation Measure 11-11**.

The Navy has received regulatory environmental closure of hillside USTs 1, 7, 9, 10, 11, 16, 17, and 20 from the SFRWQCB. No potential environmental impacts remain for these hillside

USTs. However, for the remaining USTs, potential groundwater impacts remain (2 through 6, 8, 12 through 15, 18, and 19). **Mitigation Measures 11-10 and 11-11** included in **Section 5.2.11** for USTs 2 through 6, 8, and 12 through 15, 18, and 19 would reduce potential impacts to *less-than-significant* levels.

4.12.6 Alternative A would not generate emissions or handle hazardous/acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.

There are no schools within one-quarter mile of the project site. The nearest school is the Washington Elementary School located approximately 2.55 miles southeast of the project site at 565 Wine Street, Richmond. As such, *no impact* would occur.

4.12.7 Alternative A would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.

The project site has been classified as Very High Fire Hazard Severity Zone (VHFHSZ) by the City of Richmond. As described in **Section 3.5**, the project site is characterized by the presence of several vegetative communities, including: annual grassland, coastal scrub, mixed riparian, eucalyptus woodland, and, invasive scrub. Moderate on-site fuel loading from dead organic debris was observed during preparation of this EIS/EIR related to eucalyptus woodlands and associated litter fuels. The resultant fuel loading on the project site increases the risk of significant loss, injury or death involving wildland fires. These fire risks can be addressed by maintaining buffer zones in areas of development that are adjacent to high risk fire areas. Fire buffer zones mitigate the fire risks by reducing the rate of spread of a wildland fire, resulting in a significant reduction in the potential intensity for uncontrollable fires. Assuming full project built out, irrigated landscaped areas and paved surfaces would serve as adequate fire protection buffer zones. Additionally, removing dead and dying trees, scrubs, and other organic debris on an annual basis would help to reduce fire loads, subsequently mitigating potential fire risks. Such measures would be part of the Vegetation Management Plan (VMP) to be created by a qualified and regionally affiliated vegetation ecologist/restoration specialist. The VMP would be implemented during project operation. When fuel loading from dead and dying trees are managed as part of a VMP and not allowed to accumulate, fire risks are greatly reduced. This impact is considered *less-than-significant*. Incorporation of a VMP included as **Mitigation Measure 4-9**, and building code regulations described under **Mitigation Measure 1-3** would reduce potential fire risks. **Mitigation**

Measures 11-13 and **11-14** would further reduce construction related impacts from increased fire risks during construction.

4.12.2 ALTERNATIVE B – MIXED-USE TRIBAL DESTINATION RESORT AND CASINO WITH RESIDENTIAL COMPONENT

IMPACTS OF ALTERNATIVE B

4.12.8 Alternative B would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This is a less-than-significant impact.

Transport

As discussed in **Section 3.12**, there are no petroleum products or hazardous materials being stored on the project site since the Navy ceased fueling operations in 1996. Therefore, no hazards would be created resulting from the routine transport, use, or disposal, nor through reasonably foreseeable upset or accidental conditions involving the release of hazard materials.

Hazardous Materials Use

As stated in **Section 4.12.1**, the transport of cleaning supplies, pesticides, herbicides, and fertilizers would be governed by federal and State laws to ensure proper transport occurs, thus minimizing injury to human health and the environment. Additionally, the presence of laws governing the use and labeling of workplace chemicals and landscaping materials and the relatively small quantities of such materials onsite, a *less-than-significant* impact would occur. Finally, all materials transported to the site would be utilized as directed, thus no inadvertent disposal of these chemicals would occur on-site. No storage of bulk pesticides and fertilizers would occur during project operation, thus potential environmental injury from inadvertent disposal would not occur. This is a *less-than-significant* impact. However, mitigation is proposed in **Section 5.2.11** to further reduce impacts.

As stated under Alternative A, diesel powered generators would be necessary for hotel and casino fire suppression systems and as a secondary power source for the facilities planned under Alternative B. Security personnel would monitor the leak detection systems. Because of containment measures and leak monitoring, the presence of diesel fuels on the project site would not result in a significant hazard to the public or environment. As such, a *less-than-significant* impact would occur.

Hazardous Materials Use-Residential Development

The use of household chemicals such as cleaning materials, floor strippers, herbicides, pesticides, and fertilizers is not expected to occur in quantities that would require special considerations within the residential development planned under Alternative B. The routine

transport, use, and storage, of household chemicals associated with the residential components for Alternative B are not expected to occur such that injury to human health or the environment would occur. Pesticide activities are regulated under FIFRA, which requires that all pesticide application remain consistent with product label instructions. The use of household cleaners generally occurs through non-regulated applications, thus the use of household chemicals would result in a less-than-significant impact. Pesticide application would be performed in a manner consistent with product label and manufacturer's recommendations such that environmental injury does not occur. Thus, due to the presence of laws governing the use of household chemicals and landscaping materials and the relatively small quantities that would occur under Alternative B, a *less-than-significant* impact would occur.

Disposal

Diesel fuels and chemicals in the form of cleaning supplies, solvents, pesticides, and herbicides used during operation of Alternative B would be used as directed and according to manufacturers' guidelines. All materials transported to the site would be utilized as directed, thus no inadvertent disposal of these chemicals would occur onsite. No storage of bulk pesticides and fertilizers would occur during project operation, thus potential environmental injury from inadvertent disposal would not occur. This is a *less-than-significant* impact. However, mitigation is proposed in **Section 5.2.11** to further reduce impacts.

4.12.9 Alternative B has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1 through 3-13, 11-1 and 11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

Potential impacts associated with remediation under Alternative B would be similar to those for Alternative A, as analyzed in **Impact 4.12.2** above. As discussed in **Section 2.1.5**, aggressive remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release hazardous materials could result in potential human and environmental impacts. Such impacts

are considered *potentially significant* and mitigation is proposed in **Sections 5.2.2, 5.2.3 and 5.2.11.**

Alternative B hazardous materials impacts would be similar as those impacts identified for Alternative A. However, Alternative B involves more construction activity associated with residential components that would result in an increased potential to discover previously unidentified impacted soils and groundwater. The unanticipated discovery of impacted soil and/or groundwater could result in potentially significant human health and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Section 5.2.11.**

The presence of hazardous materials on the project site during construction would create a significant impact if spilled in such quantities that residual impacts and potential contamination occurs. A *potentially significant* impact would occur if hazardous materials are not stored in a manner that minimizes potential environmental injury. BMPs for hazardous materials storage within a site specific SWPPP (**Mitigation Measure 11-1**) would reduce potential impacts to *less-than- significant* levels.

As discussed in **Section 3.12**, the Chevron-Richmond Refinery has an anhydrous ammonia storage area. While Alternative B includes residential development, impacts related to a potential anhydrous ammonia release are similar to those described under **Impact 4.12.2** above. As discussed in the discussion for **Impact 4.12.2**, if an accidental ammonia release occurred at the Chevron-Richmond Refinery, there is a very low probability of an ammonia cloud reaching the project site. In the event of an NH₃ vapor cloud reaching the project site, potentially significant human health impacts would occur. These impacts would be based on exposure concentrations at the project site.

Given the very low probability of an accidental ammonia release to occur, the active safeguards currently in place at the Chevron-Richmond Refinery, mitigating environmental factors discussed above, and implementation of **Mitigation Measure 11-2**, potential human health risks associated with an NH₃ release would be reduced to *less-than-significant* levels.

4.12.10 Alternative B would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.

As with Alternative A, in the event of a hazardous materials release on the nearby Chevron-Richmond Refinery, CCHS would activate the CWS to alert the community that such a release

has occurred. Impacts from Alternative B are the same as those described under **Impact 4.12.3**. This impact is considered *less-than-significant*.

- 4.12.11 Alternative B is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore development of Alternative B would not result in a safety hazard for people residing or working in the project area. As a result, no impact would occur.**

As stated above for Alternative A, the nearest airports are the San Rafael Airport located approximately 6.8 miles northwest, Gness Field located approximately 15.2 miles north, and Buchanan Field located approximately 20 miles east of the project site. The project site is not located within an area covered by an airport land use plan or within 2-miles of a public use airport, or in the vicinity of a private airstrip. As such, *no impact* would occur.

- 4.12.12 Development areas associated with Alternative B are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result, development of Alternative B poses a potentially significant risk to human health and the environment. This is a potentially significant impact.**

Significance After Mitigation

With implementation of **Mitigation Measures 11-3 through 11-11** presented in **Section 5.2.11**, potential human health and environmental impacts would be reduced to *less-than-significant* levels.

Impact Discussion

IR-01: Former Landfill: Impacts resulting from the area of the Former Landfill are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5**.

Although significant human health and environmental impacts are not expected in the areas of the former landfill, mitigation is proposed in **Section 5.2.11** to ensure impacts remain *less-than-significant*.

IR-02 Areas A and B (Historic District): Impacts resulting from IR-02 (Historic District) are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5** above. Potentially significant human health impacts would be reduced to less-than-significant levels through the development and implementation of a site specific SMP. This is a *potentially significant* impact. Removal of affected soils within the IR-02 (Area A) investigation and development of a SMP are included as mitigation in **Section 5.2.11** and would reduce this impact to a *less-than-significant* level.

IR-02 Areas C, D, and E (Drum lot 2): Under Alternative B, Areas C, D, and E (Drum lot 2) would be mass graded and subsequently developed into a residential neighborhood. There are no exceedances of the residential ESLs within the planned residential development area. Lead concentrations did exceed waste disposal requirements triggering disposal as California hazardous waste. Potential human health impacts would result if a site specific SMP is not developed and implemented. This impact is considered *potentially significant*. If excavation occurs in Areas C, D, and E, a site specific soil management plan would be developed and implemented. Soils that would be removed from Areas C, D, and E would be transported to a certified hazardous waste facility. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

IR-03: Treatment Ponds Area: Under Alternative B, impacts resulting from development of the treatment ponds area would be identical to those identified under Alternative A. Impacts are considered *potentially significant*. Refer to the discussion under **Impact 4.12.5**. Mitigation is proposed in **Section 5.2.11**.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative B, the shoreline areas would be developed for use as a publicly accessible park. No further action is necessary for impacted groundwater within the northern shoreline areas. For Alternative B, human health and ecological impacts in the areas of the former pipelines and Drum lot 1 are the same as Alternative A. Refer to **Impact 4.12.5** above for a discussion of potential impacts. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

IR-04: Drum Lot 2 and Building 87: Under Alternative B, Building 87 would be removed and Drum Lot 2 would be developed for residential uses. Potential impacts from affected soils are based on the residential FPALs for depths of 0 to 10 feet bgs. For groundwater, the ESLs are based on residential land use scenarios. Pesticide and PAH affected soil that exceed residential ESLs remain at Building 87. Impacted groundwater also remains in Drum lot 2 that exceeds ESLs. A human health and ecological risk assessment was prepared in 2002 and concluded that constituents that remain in soil do not pose an unacceptable risk to human health or the environment (Tetra Tech EMI, 2003). To allow for unrestricted residential uses within Drum Lot 2 and to eliminate potential human health and environmental impacts, impacted soils estimated to be less than 10 3 feet bgs would be removed and transported offsite. Ground water exceedances of the ESLs pose a potential threat to human health. The presence of groundwater exceeding ESLs is a *potentially significant* impact. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

Underground Storage Tanks – Hillside Areas

Under Alternative B, several project components are planned for the hillside areas. These project components are the same as those described under Alternative A above. Refer to **Impact 4.12.5** for a discussion of potential impacts. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

- 4.12.13 Alternative B would not generate emissions or handle hazardous/ acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.**

There are no schools within one-quarter mile of the project site. The nearest school is the Washington Elementary School located approximately 2.55 miles southeast of the project site at 565 Wine Street, Richmond. As such, *no impact* would occur.

- 4.12.14 Alternative B would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.**

Impacts resulting from wildland fires are identical to those described under Alternative A above. Refer to **Impact 4.12.7** above.

4.12.3 ALTERNATIVE C – REDUCED INTENSITY MIXED-USE TRIBAL DESTINATION RESORT AND CASINO

IMPACTS OF ALTERNATIVE C

- 4.12.15 Alternative C would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This is a less-than-significant impact**

As discussed in **Section 3.12**, there are no petroleum products or hazardous materials being stored on the project site since the Navy ceased fueling operations in 1996. Therefore, no hazards would be created resulting neither from the routine transport, use, or disposal nor through reasonably foreseeable upset or accidental conditions involving the release of hazard materials.

As stated above, diesel powered generators would be necessary for hotel and casino fire suppression systems and as a secondary power source for the facilities planned under Alternative C. Security personnel would monitor the leak detection systems. Because of

containment measures and leak monitoring, impacts from the presence of diesel fuels would be *less-than-significant*.

4.12.16 Alternative C has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1 through 3-13, 11-1 and 11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

Potential impacts associated with remediation under Alternative C would be similar to those for Alternative A, as analyzed in **Impact 4.12.2** above. As discussed in **Section 2.1.5**, aggressive remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release of hazardous materials could result in potential human and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Sections 5.2.2, 5.2.3 and 5.2.11**.

Alternative C hazardous materials impacts would be similar as those impacts identified under Alternative A. However, Alternative C involves less construction, resulting in less ground disturbance. Nevertheless, the unanticipated discovery of contaminated soil and/or groundwater could result in potential human health and environmental impacts. Such impacts are considered *potentially significant* and **Mitigation Measure 11-1** is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

For Alternative C, potential human health impacts resulting from an ammonia vapor cloud reaching the project site are identical to those discussed in **Impact 4.12.2**. If an accidental ammonia release occurred at the Chevron-Richmond Refinery, there is a very low probability of an ammonia cloud reaching the project site. To reduce potential impacts to less than significant levels the project site would be incorporated into the CCHS CWS and a site specific emergency evacuation plan would be developed and implemented. Given the very low probability of an accidental ammonia release to occur, the active safeguards currently in

place at the Chevron-Richmond Refinery, and implementation of **Mitigation Measure 11-2**, significant human health risks would be reduced to *less-than-significant* levels.

- 4.12.17 Alternative C would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.**

Impacts are identical to those identified under Alternative A. Refer to **Impact 4.12.3** for a discussion of potential impacts. This is a *less-than-significant* impact.

- 4.12.18 The development area associated with Alternative C is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip, therefore implementation of Alternative C would not result in a safety hazard for people residing or working in the project area. As a result, no impacts would occur.**

Impacts associated with Alternative C would be identical to those described under Alternative A. Refer to **Impact 4.12.10** above for a discussion. As such, *no impact* would occur.

- 4.12.19 Development areas associated with Alternative C are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result development of Alternative C poses a potentially significant risk to human health and the environment. This is a potentially significant impact.**

Significance After Mitigation

With implementation of **Mitigation Measures 11-3** through **11-11** presented in **Section 5.2.11**, potential human health and environmental impacts would be reduced to *less-than-significant* levels.

Impact Discussion

IR-01: Former Landfill: Impacts resulting from the area of the Former Landfill are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5**.

Although significant human health and environmental impacts are not expected in the areas of the former landfill, mitigation is proposed in **Section 5.2.11**.

IR-02 Areas A and B (Historic District): Impacts resulting from IR-02 (Historic District) are identical to those described under Alternative A. Although adverse health and environmental effects are not anticipated, mitigation is proposed in **Section 5.2.11**.

IR-02 Areas C, D, and E (Drum lot 2): Under Alternative C, this area would remain undeveloped. Affected soils were removed in 1999, and upon regulatory agency approvals, a NFA ROD was prepared in for the IR-02 Drum Storage Area. EPA concurred with the SFRWQCB that no further investigations are necessary for this area.

IR-03: Treatment Ponds Area: Under Alternative C, the area of the former treatment ponds would be the location of the casino and hotel. Impacts resulting from development of the treatment ponds area would be identical to those identified under Alternative A. Refer to the discussion under **Impact 4.12.5**.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative C, the shoreline areas would be developed for use as a publicly accessible park. No further action is necessary for impacted groundwater within the northern shoreline areas. Potential human health impacts are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5**. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

IR-04: Drum Lot 2 and Building No. 87: Under Alternative C, Building 87 would be removed and Drum Lot 2 would remain as a paved parking area used for event over-flow. Pesticide and PAH affected soil that exceed commercial/industrial ESLs remain at Building No. 87. Dieldrin and benzo(a)pyrene have been detected in groundwater at concentrations above the ESLs in areas adjacent to and beneath Building No. 87. These concentrations have been steadily decreasing over the previous nine years. Potential human health and ecological impacts would be mitigated through the removal of impacted soils estimated to be 3 feet bgs or other measures as required by the SFRWQCB. Residual impacts are the same as those identified under **Impact 4.12.5**. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

Underground Storage Tanks – Hillside Areas

Under Alternative C, project components planned for the hillside areas are similar to those described under Alternative A. These project components include; tribal offices, roundhouse, and dance grounds, but does not include resort hotel cabanas. Refer to the above discussion under **Impact 4.12.5**.

Potential vapor intrusion risks remain for USTs 1, 2, 3, 5, 7, and 13. These impacts are identical to the impacts identified under Alternative A. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

- 4.12.20 Alternative C would not generate emissions or handle hazardous/ acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.**

There are no schools within one-quarter mile of the project site. The nearest school is the Washington Elementary School located approximately 2.55 miles southeast of the project site at 565 Wine Street, Richmond. As such, *no impact* would occur.

- 4.12.21 Alternative C would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.**

Impacts resulting from wildlife fires for Alternative C are similar to those impacts identified under Alternative A because the areas proposed for development have a similar foot print. Fuel loading from dead and dying trees would not differ from the relatively small variations in development areas. Refer to **Impact 4.12.7**. A *less-than-significant* impact would occur, with mitigation proposed to further reduce potential impacts.

4.12.4 ALTERNATIVE D – NON-TRUST ACQUISITION WITH NON-GAMING MIXED-USE DEVELOPMENT

IMPACTS OF ALTERNATIVE D

- 4.12.22 Alternative D would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This is a less-than-significant impact.**

As discussed in **Section 3.12**, there are no petroleum products or hazardous materials being stored on the project site since the Navy ceased fueling operations in 1996. Therefore, no hazards are present from the routine transport, use, or disposal of hazardous materials.

Diesel powered generators would be necessary for hotel and convention center fire suppression systems and as a secondary power source for the facilities planned under Alternative D. Security personnel would monitor the leak detection systems. Because of containment measures and leak monitoring, the presence of diesel fuels would not result in a significant impact. As a result, impacts would be *less-than-significant* and no mitigation is proposed.

4.12.23 Alternative D has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1 through 3-13, 11-1 and 11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

Potential impacts associated with remediation under Alternative D would be similar to those for Alternative A, as analyzed in **Impact 4.12.2** above. As discussed in **Section 2.1.5**, aggressive remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release hazardous materials could result in potential human and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Sections 5.2.2, 5.2.3 and 5.2.11**.

Impacts associated with the development of Alternative D are similar to those impacts identified under Alternative B. Continued remediation and cleanup, as well as future monitoring efforts, as stipulated in the Final CAP (Tetra Tech EMI, 2002a.) would continue under Alternative D. The CAP includes groundwater-monitoring requirements that would continue with regulatory oversight provided by the SFRWQCB. Groundwater monitoring would continue in areas adjacent to the hillside USTs and areas that are identified in the IRP and CAP. The site specific FPALs, as applicable, and SFRWQCB ESLs, would continue to be used during future monitoring to determine if groundwater conditions change such that a threat is posed to human health and the environment. If future groundwater monitoring results exceed the screening criteria, the potential source would be identified and the SFRWQCB would be consulted to determine the proper course of action.

Although not likely, the possibility does exist that undiscovered contaminated soil and/or groundwater exists on the project site. Construction staff could encounter contamination during construction related earth moving activities. The unanticipated discovery of contaminated soil and/or groundwater could result in potential human health and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Section 5.2.11** that will reduce such impacts to *less-than-significant* levels.

Potential human health impacts resulting from an ammonia vapor cloud reaching the project site are identical to those discussed in **Impact 4.12.2**. If an accidental ammonia release occurred at the Chevron-Richmond Refinery, there is a very low probability of an ammonia cloud reaching the project site. To reduce potential impacts to less than significant levels the project site would be incorporated into the CCHS CWS and a site specific emergency evacuation plan would be developed and implemented. Given the very low probability of an accidental ammonia release to occur, the active safeguards currently in place at the Chevron-Richmond Refinery, and implementation of **Mitigation Measure 11-2**, significant human health risks would be reduced to *less-than-significant* levels.

- 4.12.24 Alternative D would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.**

Impacts of Alternative D are identical to those impacts described under Alternative B; refer to impact discussion **4.12.9**. As such, Alternative D would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a *less-than-significant* impact.

- 4.12.25 The development area associated with Alternative D is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore implementation of Alternative D would not result in a safety hazard for people residing or working in the project area. As a result, no impact would occur.**

The nearest airports are the San Rafael located approximately 6.8 miles northwest, Gness Field located approximately 15.2 miles north, and Buchanan Field located approximately 20 miles east of the project site. The project site is not located within an area covered by an airport land use plan. *No impact* would occur.

- 4.12.26 Development areas associated with Alternative D are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result development of Alternative D poses a potentially significant risk to human health and the environment. This is a potentially significant impact.**

Significance After Mitigation

With implementation of **Mitigation Measures 11-3** through **11-11** presented in **Section 5.2.11**, potential human health and environmental impacts would be reduced to *less-than-significant* levels.

Impact Discussion

IR-01: Former Landfill: Impacts resulting from the area of the Former Landfill are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5**.

Although significant human health and environmental impacts are not expected in the areas of the former landfill mitigation is proposed in **Section 5.2.11** that would ensure impacts remain at a *less-than-significant* level.

IR-02 Areas A and B (Historic District): Impacts resulting from IR-02 (Historic District) are similar to those described under Alternative B. This area would be developed and utilized for a residential development. Soils that remain in place are below the threshold limits used for commercial/industrial land use scenarios; however, the analytical results from soils exceed the SFRWQCB ESLs for residential land use scenarios. Significant human health and ecological impacts remain in Areas A and B this is a *potentially significant* impact. Removal of affected soils would allow for unrestricted residential use under Alternative C₂ in the historical district. Removal of affected soils would reduce potential impacts to *less-than-significant* levels. **Mitigation Measure 11-5** would ensure impacts are reduced to *less-than-significant* levels.

IR-02 Areas C, D, and E (Drum lot 2): Under Alternative D, IR-02 Areas C, D, and E (Drum Lot 2) would be developed as a residential component of the non-gaming/non-trust alternative. Residential ESLs were used as screening criteria to assess human health and environmental impacts during site cleanup activities within IR-02 (Drum Lot 2). Soils affected with sandblast grid were removed in 1999, and upon regulatory agency approvals, a NFA ROD was prepared for Drum Lot 2. EPA concurred with the SFRWQCB that no further investigations are necessary for this area. If excavation occurs in Areas C, D, and E, a site specific soil management plan would be implemented as discussed in **Mitigation Measure 11-1**. Soils that would be removed from Areas C, D, and E would be transported to a licensed disposal facility. No residual human or ecological impacts are anticipated from Drum Lot 2.

IR-03: Treatment Ponds Area: Under Alternative D, the areas of the former treatment ponds would be developed into the northern residential areas. Impacts resulting from development of the treatment ponds area would be similar to those identified under Alternative A. Refer to the discussion under **Impact 4.12.5**.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative D, the shoreline areas would be developed for use as a publicly accessible park. No further action is necessary for impacted groundwater within the northern shoreline areas. Potential human health impacts remain in the southern shoreline areas as a result of TPH and related constituents that remain in soil and groundwater. Additionally, soil impacted with PAHs is present in the areas of former valve boxes. The presence of impacted soils could pose a significant risk to human health if excavation activities are proposed for Drum Lot 1 and the Southern shoreline areas. These areas would not be excavated for Alternative D, therefore potential impacts are *less-than-significant*.

IR-04: Drum Lot 2 and Building 87: Under Alternative D, Building 87 would likely be removed and Drum Lot 2 would be developed for residential uses. Potential impacts are identical to those identified under Alternative B. Refer to **Impact 4.12.12** above.

Underground Storage Tanks – Hillside Areas

Under Alternative D, several project components are planned for the hillside areas. The project components include two residential neighborhoods. As designed, the single-family residences would be built adjacent to USTs 1, 2 and 3. Prior to development, the subject USTs would be excavated and removed. Deed restrictions related to these specific USTs would be removed upon regulatory closure and concurrence from SFRWQCB. Exceedences of the screening criteria would require further SFRWQCB consideration to ensure human health and environmental impacts are reduced to *less-than-significant* levels.

- 4.12.27 Alternative D would not generate emissions or handle hazardous/acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.**

There are no schools within one-quarter mile of the project site. The nearest school is the Washington Elementary School located approximately 2.55 miles southeast of the project site at 565 Wine Street, Richmond. As such, *no impact* would occur.

- 4.12.28 Alternative D would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.**

Impacts resulting from wildlife fires for Alternative D are similar to those impacts identified under Alternative A because fire risk would be maintained under a similar management plan. Refer the discussion under **Impact 4.12.7** for implementation of VMP. However, as the

development of Alternative D would remain under the jurisdiction of the City of Richmond, the building code requirements within a City VHFHSZ would apply. This is considered a *less-than-significant* impact.

4.12.5 ALTERNATIVE E – TOTAL PARKLAND

IMPACTS OF ALTERNATIVE E

4.12.29 Alternative E would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, as a result, a less-than-significant impact would occur.

Under Alternative E, there would be no planned transport, use, or disposal of hazardous materials during routine operation. If grounds-keeping maintenance equipment were stored on the parkland site, any major repairs and/or maintenance would be conducted off site with the exception of checking fluids such as motor oil and gasoline. If gasoline were to be stored on-site, the volumes would be limited to 550 gallon above ground storage tanks (ASTs). Fueling would only occur in designated areas that are equipped with secondary containment, spills kits, and absorbent materials in case of a spill. Such ASTs would be permitted through the County. All grounds keeping equipment would be stored within covered cement slab storage units such that incidental dripping of fuels and oils from the equipment would not reach surface soil. As a result, impacts are *less-than-significant*.

As discussed in **Section 3.12**, there are no petroleum products or hazardous materials being stored on the project site since the Navy ceased fueling operations in 1996. Therefore, no hazards are present from the routine transport, use, or disposal of hazardous materials. As a result, impacts are *less-than-significant*.

4.12.30 Alternative E has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a less-than-significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1 through 3-16, 11-1 and 11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

Potential impacts associated with remediation under Alternative E would be similar to those for Alternative A, as analyzed in **Impact 4.12.2** above. As discussed in **Section 2.1.5**, remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release hazardous materials could result in potential human and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Sections 5.2.2, 5.2.3 and 5.2.11**.

Alternative E involves minimal construction activity, as the site would only be used as parkland. Construction activity would be limited to development of the Bay Trail segment along the shoreline and maintenance of hillside trails. Construction activity associated with Alternative E would involve using small construction equipment and minimal ground disturbance. Because there would be no mass grading and excavation activity associated with Alternative E, the potential for the unanticipated discovery of contaminated soil and/or groundwater is considered to have a less than significant impact minimal. Mitigation is proposed in **Section 5.2.11** to ensure that this impact is reduced to a would remain less-than-significant level.

Continued remediation and cleanup, as well as future monitoring efforts, as stipulated in the Final CAP (Tetra Tech EMI, 2002a.) shall continue under Alternative E. The CAP includes groundwater-monitoring requirements that would continue with regulatory oversight provided by the SFRWQCB. Groundwater monitoring would continue in areas adjacent to the hillside USTs and areas that are identified in the IRP and CAP. The site specific FPALs, as applicable, and SFRWQCB ESLs, would continue to be used during future monitoring to determine if groundwater conditions change such that a threat is posed to human health and the environment. If future groundwater monitoring results exceed the screening criteria, the potential source would be identified and the SFRWQCB would be consulted to determine the proper course of action.

Potential human health impacts resulting from an ammonia vapor cloud reaching the project site are identical to those discussed in **Impact 4.12.2**. If an accidental ammonia release occurred at the Chevron-Richmond Refinery, there is a very low probability of an ammonia cloud reaching the project site. To reduce potential impacts to less than significant levels the project site would be incorporated into the CCHS CWS and a site specific emergency evacuation plan would be developed and implemented. Given the very low probability of an accidental ammonia release to occur, the active safeguards currently in place at the Chevron-

Richmond Refinery, and implementation of **Mitigation Measure 11-2**, significant human health risks would be reduced to *less-than-significant* levels.

4.12.31 Alternative E would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.

Impacts of Alternative E are reduced relative to the four development alternatives (A – D), since the project site would be used solely for recreation. As such, potential impacts would be *less-than-significant*; refer to **Impact 4.12.9**. Thus, Alternative E would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan.

4.12.32 The project site associated with Alternative E is not located within a land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore implementation of Alternative E would not result in a safety hazard for people residing or working in the project area. As a result, no impact would occur.

The nearest airports are the San Rafael Airport located approximately 6.8 miles northwest, Gness Field located approximately 15.2 miles north, and Buchanan Field located approximately 20 miles east of the project site. The project site is not located within an area covered by an airport land use plan. As such, *no impact* would occur.

4.12.33 Alternative E is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result development of Alternative E poses a potentially significant risk to human health and the environment. This is a less-than-significant impact.

IR-01: Former Landfill: Impacts resulting from the area of the Former Landfill are identical to those described under Alternative A. Refer to **Impact 4.12.5**. Although significant human health and environmental impacts are not expected in the areas of the former landfill, **Mitigation Measures 11-23** and **11-35** would ensure future potential impacts remain *less-than-significant*.

IR-02 Areas A and B (Historic District): Under Alternative E, the Winehaven Historic District would be stabilized, yet without any new construction. It is anticipated that surface soils would be left in place. Therefore, human health and environmental impacts are not anticipated and *no impact* would occur.

IR-02 Areas C, D, and E (Drum lot 2): Under Alternative E the areas of the Drum Lot 2 would not be disturbed. No human or ecological impacts from Alternative E are anticipated from Drum Lot 2. *No impact* would occur.

IR-03: Treatment Ponds Area: Under Alternative E, the areas of the former treatment ponds would not be developed and would continue to be remediated under the Navy IRP. *No impact* would occur, however the area would be closed to the public for the foreseeable future.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative E, the shoreline areas would be developed for use as a publicly accessible park. No further action is necessary for impacted groundwater within the northern shoreline areas. Potential human health impacts remain in the southern shoreline areas as a result of TPH and related constituents that remain in soil and groundwater. Additionally, soil impacted with PAHs is present in the areas of former valve boxes. **Mitigation Measures 11-2 and 11-63**, included in **Section 5.2.11**, address potential human health and environmental risks and would reduce potential impacts to *less-than-significant* levels.

Underground Storage Tanks – Hillside Areas

Under Alternative E, there are no project components planned for the hillside areas. Alternative E would not require hillside USTs be excavated. Deed restrictions would remain in place. Therefore human health and environmental impacts would not be present and *no impact* would occur.

4.12.34 Alternative E would not emit emissions or handle hazardous/acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.

Alternative E impacts regarding safety hazards associated with project vicinity to local schools are similar to those discussed under Alternative A, **Impact 4.12.6**. Therefore, *no impact* would occur.

4.12.35 Alternative E would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.

Impacts resulting from wildlife fires for Alternative E are identical to those impacts identified under Alternative A. Alternative E would not place buildings on the project site. Nevertheless, people could be exposed to fire if vegetation and fuel loading is not managed;

refer to **Impact 4.12.7** for a description of the VMP. A *less-than-significant* impact would occur.

4.12.6 ALTERNATIVE F – NO ACTION

IMPACTS OF ALTERNATIVE F

4.12.36 Alternative F would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, as a result, no impact would occur.

Under Alternative F, no development or infrastructure upgrades would occur on the project site. Since Naval fueling operations ceased in 1996, there has been no transportation or storage of petroleum products or hazardous materials on the project site. As such, no hazards are present through the routine transport, use, or disposal of petroleum products or hazardous materials, and *no impact* would occur.

4.12.37 Alternative F does not have the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. No impact would occur.

As no development would occur under Alternative F, the potential for a significant public hazard due to the release of hazardous materials into the environment would remain the same as present.

As discussed in the impacts analysis under **Impact 4.12.2**, if all safety features that guard against a catastrophic ammonia release fail to prevent an ammonia vapor cloud from reaching the project site, adoption of a site-specific emergency response plan for the project site would ensure potential impacts remain less than significant. Such a plan would include integration of the project site into the existing Contra Costa Health Service (CCHS) Community Warning System (CWS). When activated, the CWS would alert management personnel that a release has occurred. If necessary, patrons would be alerted to remain indoors until the CWS is deactivated. Integration of the project sites into the CCHS CWS would not occur under the No Action Alternative. Thus existing impacts would remain the same and *no impact* would occur.

4.12.38 Alternative F would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. No impact would occur.

As no development would occur under Alternative F, implementation or physical interference with an adopted emergency response plan or emergency evacuation plan would not occur. As such, *no impact* would occur.

- 4.12.39** The project site associated with Alternative F is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip, therefore implementation of Alternative F would not result in a safety hazard for people residing or working in the project area. No impact would occur.

No development would occur under Alternative F; as a result, *no impact* would occur.

- 4.12.40** The project site associated with Alternative F is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result Alternative F poses a potentially significant risk to human health or the environment. This is a less-than-significant impact.

As discussed in **Section 3.12**, there are two ongoing remediation and monitoring programs under the current base wide monitoring program. Under the No Action Alternative, these remediation programs would continue, and much of the site would remain inaccessible to the public until the Navy completed the remediation activities to at least commercial standards. There is currently no Navy commitment or timetable to do so.

Impact 4.12.5 identifies the four areas in the IRP which include IR-01 (Navy owned property), IR- 02(City and Navy owned property), IR-03 (Navy owned property), and IR-04 (City and Navy owned).

IR-01: Former Landfill: Under Alternative F, the former landfill area would remain undeveloped; as a result, the soil cap would remain in place. Under the Final Post Closure Maintenance and Monitoring Plan (FPCMMP) (TTEMI, 2002b) the City would continue to maintain and monitor the former landfill, including continued land use restrictions to ensure soil cap integrity. *No impact* would occur.

IR-02 Areas A and B (Historic District): Under Alternative F, IR-02 would remain under current land uses. During closure activities, the Navy removed soils impacts by metals within IR-02. A follow-up human health and ecological risk assessment was conducted using the commercial/industrial land use scenarios. These results indicate constituents of COCs that remain in soils are not expected to result in adverse human health or environmental impacts under commercial/industrial land use scenarios. Given that remaining impacted soils do not

pose a significant impact under the current land uses, no human health or ecological impact would occur under the No action Alternative. This is a *less-than-significant* impact.

IR-02 Areas C, D, and E (Drum lot 2): Under Alternative F, this area will remain under current land uses and remain undeveloped. The No Further Action Record of Decision (NFA ROD) issued by the Navy and approved by the SFRWQCB for this area was developed after 48 cyds was removed to an offsite hazardous waste facility. It was determined that COCs that remain in the soils would do not pose residual human health hazards or ecological impacts. As a result, the Navy has ceased remedial action within Drum Lot 2. The soils that remain in place contain metals that exceed residential ESLs and lead at concentrations that exceed hazardous waste thresholds. Under Alternative F, the Navy would not implement an aggressive clean-up program at Drum Lot 2, therefore, leaving the affected soils in place. The removal of soils from Drum Lot 2 that exceed hazardous waste classification would not occur under Alternative F. Leaving such soils in place is would not result in significant environmental or human health impacts. As such, *no impact* would occur.

IR-03: Treatment Ponds Area: Under Alternative F, impacted groundwater that exceeds site specific FPALs for TPH and BTEX remain within IR-03. According to the BWMP discussed in Alternative A (**Impact 4.12.5**), the free product within groundwater is currently present in four of the ten monitoring wells, and petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), and vinyl chloride have been detected in three of the ten monitoring wells at concentrations exceeding groundwater ESL screening criteria. Soils that exceed site-specific FPALs for TPH, PAHs, and volatile organic compounds (VOCs) are present in the area of the former treatment ponds. Under the No Action Alternative, it would be assumed the Navy would continue to operate the onsite containment and extraction system. This is a *less-than-significant* impact.

Under Alternative F, the Navy would not implement an aggressive clean-up at IR-03, leaving the bulk of contaminants in place. The proposed removal of petroleum compounds in soils and groundwater included in Alternatives A, B, C, and D would not be implemented under Alternative F. The absence of the mitigation proposed for Alternatives A, B, C, and D would decrease remediation efforts and increase the length of transfer time of IR-03 from the Navy to the City. This is a *less-than-significant* impact.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative F, the shoreline areas would remain under current land uses. Levels of THP and related constituents exceed recreational and park maintenance FPALs; as a result, potential human health and ecological impacts remain. Under Alternative F, TPH and related constituents will remain in soil and groundwater along the southern shoreline areas and would not be mitigated. For the

northern shoreline areas and Drum lot 1, under Alternatives A, B, C, and D, areas adjacent to the former pipelines south of Drum lot 1 would be further investigated, as well as Drum lot 1. An aggressive removal of affected soils within Drum lot 1 and further investigations of the former pipelines south of Drum lot 1 would only occur if required by the RWQCB under the No Action Alternative. For the southern shoreline area, source of free product at MW-10-23 and PAH impacts near former VB-1, VB-2, and VB-3 would not be further investigated unless required by RWQCB directives. It would be assumed the Navy would continue remedial investigations within IR-04 under Alternative F. This is a *less-than-significant* impact.

IR-04: Drum Lot 2 and Building 87: Under Alternative F, these areas are to remain under current land uses. Pesticide and PAH affected soil exceeding commercial/industrial ESLs around Building 87 would remain unmitigated. Groundwater affected with VOCs that exceed the ESLs also remain in place, posing a potential threat to human health and/or the environment. Under Alternatives A, B, C, and D affected soils would be remediated to eliminate potential exposure pathways that would lead to potential human health impacts. This aggressive clean up would not occur under the No Action Alternative. This is a *potentially significant* impact.

Underground Storage Tanks – Hillside Areas

Under Alternative F, hillside USTs 1, 2, 3, 5, 7, and 13 would be not excavated and removed. Moreover regulatory closure and lifting of the relevant deed restrictions by the SFRWQCB would not occur. SFRWQCB ESLs for potential vapor intrusion risks would not be used as screening criteria for USTs 1, 2, 3, 5, 7, and 13 under Alternative F as with Alternatives A, B, C, D, and E.

The Navy has received regulatory environmental closure of hillside USTs 1, 7, 9, 10, 11, 16, 17, and 20 from the SFRWQCB. No impacts would occur for these hillside USTs. However, for the remaining USTs, potential groundwater impacts remain (2 through 6, 8, 12 through 15, 18, and 19) according to the SFRWQCB. Under the No Action Alternative it is assumed the Navy would continue to seek closure of the hillside USTs through compliance with SFRWQCB directives. This is a *less-than-significant* impact and no mitigation is proposed.

4.12.41 Alternative F would not emit emissions or handle hazardous/acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.

Alternative F impacts regarding safety hazards associated with project vicinity to local schools are similar to those discussed under Alternative A, **Impact 4.12.6**. Therefore, *no impact* would occur.

4.12.42 Alternative F would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. No impacts would occur.

Under Alternative F development would not occur; therefore, exposure of people or structures to risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands would not occur. With development of Alternatives A, B, C, and D, development of man-made irrigated buffers would occur. Such buffers can serve to impede wildland fires. These man-made buffers would not be created under the No Action Alternative; therefore, *no impact* would occur and no mitigation is proposed.

4.12.7 ALTERNATIVE B1 – “PRESERVE BUILDING 6” MIXED-USE TRIBAL DESTINATION RESORT AND CASINO

IMPACTS OF ALTERNATIVE B1

4.12.43 Alternative B1 would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This is a less-than-significant impact.

Transport

As discussed in Section 3.12, there are no petroleum products or hazardous materials being stored on the project site since the Navy ceased fueling operations in 1996. Therefore, no hazards would be created resulting from the routine transport, use, or disposal, nor through reasonably foreseeable upset or accidental conditions involving the release of hazard materials.

Hazardous Materials Use

A stated in Section 4.12.1, the transport of cleaning supplies, pesticides, herbicides, and fertilizers would be governed by federal and State laws to ensure proper transport occurs, thus minimizing injury to human health and the environment. Additionally, the presence of laws governing the use and labeling of workplace chemicals and landscaping materials and the relatively small quantities of such materials onsite, a less-than-significant impact would occur. Finally, all materials transported to the site would be utilized as directed, thus no inadvertent disposal of these chemicals would occur on-site. No storage of bulk pesticides and fertilizers would occur during project operation, thus potential environmental injury from inadvertent disposal would not occur. This is a less-than-significant impact. However, mitigation is proposed in Section 5.2.11 to further reduce impacts.

As stated under Alternative A, diesel powered generators would be necessary for hotel and casino fire suppression systems and as a secondary power source for the facilities planned under Alternative B1. Security personnel would monitor the leak detection systems. Because of containment measures and leak monitoring, the presence of diesel fuels on the project site would not result in a significant hazard to the public or environment. As such, a *less-than-significant* impact would occur.

Hazardous Materials Use-Residential Development

As with Alternative B, the use of household chemicals such as cleaning materials, floor strippers, herbicides, pesticides, and fertilizers is not expected to occur in quantities that would require special considerations within the residential development planned under Alternative B1. The routine transport, use, and storage, of household chemicals associated with the residential components for Alternative B1 are not expected to occur such that injury to human health or the environment would occur. Pesticide activities are regulated under FIFRA, which requires that all pesticide application remain consistent with product label instructions. The use of household cleaners generally occurs through non-regulated applications, thus the use of household chemicals would result in a less-than-significant impact. Pesticide application would be performed in a manner consistent with product label and manufacturer's recommendations such that environmental injury does not occur. Thus, due to the presence of laws governing the use of household chemicals and landscaping materials and the relatively small quantities that would occur under Alternative B1, a *less-than-significant* impact would occur.

Disposal

Diesel fuels and chemicals in the form of cleaning supplies, solvents, pesticides, and herbicides used during operation of Alternative B1 would be used as directed and according to manufacturers' guidelines. All materials transported to the site would be utilized as directed, thus no inadvertent disposal of these chemicals would occur onsite. No storage of bulk pesticides and fertilizers would occur during project operation, thus potential environmental injury from inadvertent disposal would not occur. This is a *less-than-significant* impact. However, mitigation is proposed in **Section 5.2.11** to further reduce impacts.

4.12.44 Alternative B1 has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 2-1, 2-2, 3-1** through **3-13, 11-1** and **11-2**, potential impacts to human health and the environment would be reduced to *less-than-significant* levels.

Impact Discussion

Remediation

Potential impacts associated with remediation under Alternative B1 would be similar to those for Alternative A, as analyzed in **Impact 4.12.2** above. As discussed in **Section 2.1.5**, aggressive remediation will take place to remove impacted soils that have been affected by past Navy operations on the project site. The possibility exists for accidental release of contaminants from the on-going environmental remediation. An unanticipated release of hazardous materials could result in potential human and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Sections 5.2.2, 5.2.3** and **5.2.11**.

Alternative B1 hazardous materials impacts would be identical to those impacts identified for Alternative B; and therefore, would result in an increased potential to discover previously unidentified impacted soils and groundwater. The unanticipated discovery of impacted soil and/or groundwater could result in potentially significant human health and environmental impacts. Such impacts are considered *potentially significant* and mitigation is proposed in **Section 5.2.11**.

The presence of hazardous materials on the project site during construction would create a significant impact if spilled in such quantities that residual impacts and potential contamination occurs. A *potentially significant* impact would occur if hazardous materials are not stored in a manner that minimizes potential environmental injury. BMPs for hazardous materials storage within a site specific SWPPP (**Mitigation Measure 11-1**) would reduce potential impacts to *less-than-significant* levels.

As discussed in **Section 3.12**, the Chevron-Richmond Refinery has an anhydrous ammonia storage area. While Alternative B1 includes residential development, impacts related to a potential anhydrous ammonia release are similar to those described under **Impact 4.12.2** above. As discussed in the discussion for **Impact 4.12.2**, if an accidental ammonia release occurred at the Chevron-Richmond Refinery, there is a very low probability of an ammonia cloud reaching the project site. In the event of an NH₃ vapor cloud reaching the project site, potentially significant human health impacts would occur. These impacts would be based on exposure concentrations at the project site.

Given the very low probability of an accidental ammonia release to occur, the active safeguards currently in place at the Chevron-Richmond Refinery, mitigating environmental factors discussed above, and implementation of **Mitigation Measure 11-2**, potential human health risks associated with an NH₃ release would be reduced to *less-than-significant* levels.

4.12.45 Alternative B1 would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. This is a less-than-significant impact.

As with Alternative A, in the event of a hazardous materials release on the nearby Chevron-Richmond Refinery, CCHS would activate the CWS to alert the community that such a release has occurred. Impacts from Alternative B1 are the same as those described under **Impact 4.12.3**. This impact is considered *less-than-significant*.

4.12.46 Alternative B1 is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore development of Alternative B1 would not result in a safety hazard for people residing or working in the project area. As a result, no impact would occur.

As stated above for Alternative A, the nearest airports are the San Rafael Airport located approximately 6.8 miles northwest, Gness Field located approximately 15.2 miles north, and Buchanan Field located approximately 20 miles east of the project site. The project site is not located within an area covered by an airport land use plan or within 2-miles of a public use airport, or in the vicinity of a private airstrip. As such, *no impact* would occur.

4.12.47 Development areas associated with Alternative B1 are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result, development of Alternative B1 poses a potentially significant risk to human health and the environment. This is a potentially significant impact.

Significance After Mitigation

With implementation of **Mitigation Measures 11-3** through **11-11** presented in **Section 5.2.11**, potential human health and environmental impacts would be reduced to *less-than-significant* levels.

Impact Discussion

IR-01: Former Landfill: Impacts resulting from the area of the Former Landfill are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5**.

Although significant human health and environmental impacts are not expected in the areas of

the former landfill, mitigation is proposed in **Section 5.2.11** to ensure impacts remain *less-than-significant*.

IR-02 Areas A and B (Historic District): Impacts resulting from IR-02 (Historic District) are identical to those described under Alternative A. Refer to the discussion under **Impact 4.12.5** above. Potentially significant human health impacts would be reduced to less-than-significant levels through the development and implementation of a site specific SMP. This is a *potentially significant* impact. Removal of affected soils within the IR-02 (Area A) investigation and development of a SMP are included as mitigation in **Section 5.2.11** and would reduce this impact to a *less-than-significant* level.

IR-02 Areas C, D, and E (Drum lot 2): As with Alternative B, Areas C, D, and E (Drum lot 2) would be mass graded and subsequently developed into a residential neighborhood under Alternative B1. There are no exceedances of the residential ESLs within the planned residential development area. Lead concentrations did exceed waste disposal requirements triggering disposal as California hazardous waste. Potential human health impacts would result if a site specific SMP is not developed and implemented. This impact is considered *potentially significant*. If excavation occurs in Areas C, D, and E, a site specific soil management plan would be developed and implemented. Soils that would be removed from Areas C, D, and E would be transported to a certified hazardous waste facility. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

IR-03: Treatment Ponds Area: Under Alternative B1, impacts resulting from development of the treatment ponds area would be identical to those identified under Alternative A. Impacts are considered *potentially significant*. Refer to the discussion under **Impact 4.12.5**. Mitigation is proposed in **Section 5.2.11**.

IR-04: Northern and Southern Shoreline Areas and Drum Lot 1: Under Alternative B1, the shoreline areas would be developed for use as a publicly accessible park. No further action is necessary for impacted groundwater within the northern shoreline areas. For Alternative B1, human health and ecological impacts in the areas of the former pipelines and Drum lot 1 are the same as Alternative A. Refer to **Impact 4.12.5** above for a discussion of potential impacts. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

IR-04: Drum Lot 2 and Building 87: Under Alternative B1, Building 87 would be removed and Drum Lot 2 would be developed for residential uses. Potential impacts from affected soils are based on the residential FPALs for depths of 0 to 10 feet bgs. For groundwater, the ESLs are based on residential land use scenarios. Pesticide and PAH affected soil that exceed

residential ESLs remain at Building 87. Impacted groundwater also remains in Drum lot 2 that exceeds ESLs. A human health and ecological risk assessment was prepared in 2002 and concluded that constituents that remain in soil do not pose an unacceptable risk to human health or the environment (Tetra Tech EMI, 2003). To allow for unrestricted residential uses within Drum Lot 2 and to eliminate potential human health and environmental impacts, impacted soils estimated to be less than 10 feet bgs would be removed and transported offsite. Ground water exceedances of the ESLs pose a potential threat to human health. The presence of groundwater exceeding ESLs is a *potentially significant* impact. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

Underground Storage Tanks – Hillside Areas

Under Alternative B1, several project components are planned for the hillside areas. These project components are the same as those described under Alternative A above. Refer to **Impact 4.12.5** for a discussion of potential impacts. Mitigation is proposed in **Section 5.2.11** that would reduce this impact to a *less-than-significant* level.

4.12.48 Alternative B1 would not generate emissions or handle hazardous/acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. As such, no impact would occur.

There are no schools within one-quarter mile of the project site. The nearest school is the Washington Elementary School located approximately 2.55 miles southeast of the project site at 565 Wine Street, Richmond. As such, *no impact* would occur.

4.12.49 Alternative B1 would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. This is a less-than-significant impact.

Impacts resulting from wildland fires are identical to those described under Alternative A above. Refer to **Impact 4.12.7** above.